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Editor
CHARLES H. KEENE, M. D.
3335 Main Street, Buffalo, N. Y.

Assistant Editor
EARL E. KLEINSCHMIDT, M. D.
Ann Arbor, Michigan

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A Poor Scholar . . .
because of a Poor Breakfast

MANY a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental breakfast" of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school.

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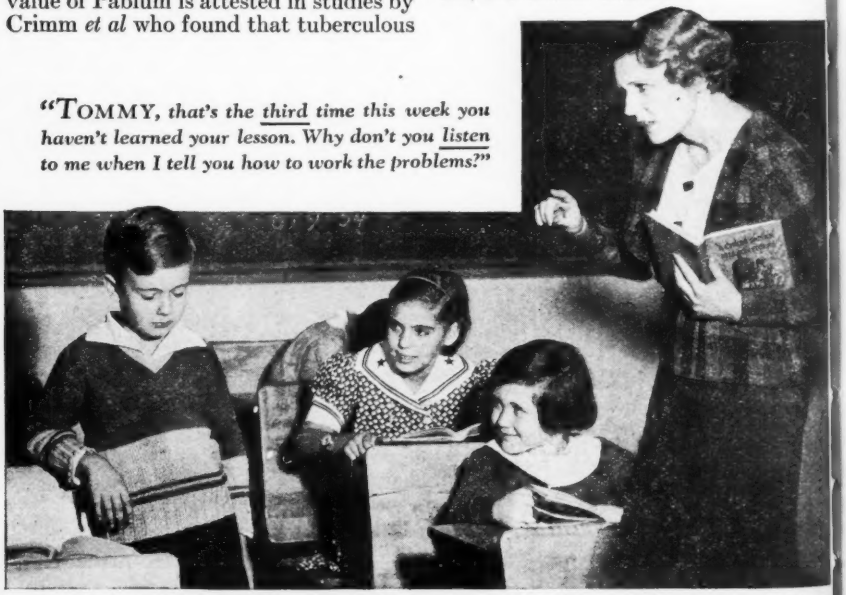

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THE JOURNAL OF SCHOOL HEALTH

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Vol. VIII FEBRUARY, 1938 No. 2

SOME PRINCIPLES AND PRACTICES OF THE HEALTH UNIT OF THE UNIVERSITY ELEMENTARY SCHOOL

LAVINIA GOULD MACKAYE, M.D.

Pediatricion, University of Michigan Elementary School

The health unit of the University Elementary School has as its purposes the protection of child health, and the education of parents, teachers, and children in health principles and practices. In performing these functions the unit is also responsible for the collection of certain of the growth data needed for the investigation of the laws of development of the organism viewed as a whole. Problems of both physical and mental health are considered the joint responsibility, according to their abilities, of all who contact children. The work of the school physician, nurse, dentist, anthropometrist, psychologist, teacher of physical education, and the classroom teacher is coordinated through a health committee of the school. A staff of this scope is possible because of the research functions of the school. A staff conference from these varied view-points often provides the key for effective work with individual children.

Of such enormous significance to the well-being of the child is the attitude of parents that definite efforts are made to foster desirable parental concepts and practices in regard to health. An initial health interview and history is obtained from the mother, and provides one of the first and most important bases for an understanding of the child as a whole. Parents are encouraged to assume responsibility for the front line of inspection. They are asked to observe their child when well in order to be sensitively aware of unusual symptoms. Some of the commonest deviations from normal are fever, malaise, lack of appetite, poor sleep, nasal discharge, cough, and vomiting. But *any* deviation from the child's usual well-being should be noted. This does not mean that variations should be met with jittery alarm. On the contrary, it is most important to discipline oneself in taking realistically cogent action without anxiety. An attitude of courageous adjustment to the real situation is an accomplishment that the adult owes the child. When the health-behavior of the child seems irregular to the parents, he should be kept at home and the necessary skilled attention sought.

An inspection by physician and nurse is carried out each morning as the child comes through the Health Unit for observation. Inspection of the face and throat are of first importance. Any child with an unusual condition is isolated and studied further. Parents are urged to give the nurse or doctor any account they can of unusual occurrences that would seem to affect the

health of the child. It is hoped that the home and school will keep each other informed concerning the child's health.

Inspection by the teacher is not a matter of a few minutes in the morning; it is a problem of the entire day. Frequently she has occasion to consult the Health Unit further, if a child shows unusual behavior or symptoms during the course of the day. She, too, acts in such a way as to give the child assurance and the general suggestion of positive health rather than of fear and discouragement. The psychological problem of flight into illness is faced with the child should he appear to be using this mechanism. The emphasis is in general on *well*-being and care is taken not to 'reward illness.'

The child should be kept at home if there is likelihood that he is infectious to others. It is particularly stressed that the individual should be removed from circulation during the first few days that indicate the onset of an infectious process. This covers the apparent time of infectiousness of the common cold, and gives time for other conditions to be diagnosed by the home physician. Practical experience suggests that frequently minor temperature elevations such as readings of 99.5 degrees F. occur without sequelae or recognizable foundation, though illness may be present or beginning with even less elevation. On the other hand, very seldom does a reading of 100 occur without explanatory developments. At least one day, and preferably a few more, in bed after a fever has dropped to normal temperature should be universal practice for minimizing toxic damage. This simple measure of conservation is within the reach of all. If a child shows no fever or other abnormal signs, and seems well, he can usually be permitted to rejoin the group three or four days after the onset of a cold, even if nasal discharge and cough remain. Though unaesthetic, these discharges probably are not infectious in the late stages. Whooping cough gives the most unmanageable exception to this plan. Nevertheless, the general trend should be toward an emphasis on excluding children early in all types of infection, and decreased insistence on very long exclusion. The booklet, Rules and Regulations for the Control of the Common Communicable Diseases (Feb., 1936, Mich. Dept. of Health, Lansing), states the law on exclusion for the common communicable diseases.

Immunization against smallpox and diphtheria is practically required for all children. In some cases of sensitization, on the home physician's recommendation, these measures may be delayed till the most favorable opportunity. Immunization directed against whooping cough is advised, but not required. If specific cases of infection occur in the school, parents are notified if their child has had contacts and if there is any advice to be given. Consultation with their own physicians concerning preventive inoculations is recommended. With chickenpox, only the disbanding of a group of susceptible contacts after the twelfth day since exposure seems to check the spread. The spread of measules has apparently been checked in the school at times by

careful observation and temperature taking from the eleventh through the fifteenth day of incubation. This may not always work perfectly, and is somewhat impractical in large groups. Mumps have thus far been prevented from spreading simply by very careful observation, including temperature taking of susceptible contacts of the original case. Impetigo has given no trouble in this group, because of good general care and relatively few contacts. The health program should represent an adjustment to the situation. In this group scabies has been absent, but there are situations in which these skin conditions require careful attention. The reasonable diminution of infectious contacts, the reduction of dosage, the lessening of the speed of transfer from case to case, the minimizing of damage are principles of immunity more practical and important than an impossible, hypothetically totally exclusive ideal.

From the point of view of the child himself, apart from contagion, it is considered helpful to adjust his total daily plan so that he will awake of his own accord in time to dress, eat breakfast, and reach school in a satisfying way. The child should take a gradually increasing responsibility for his own planning and execution in these matters. Failure to assume such fundamental responsibilities suggests a need for a reconsideration of the child's daily expenditures of energy. The understanding of casual sequences and the importance of regimen are desirable attributes of the health eduction of the child.

Small first aid kits are available in grades and on the play roof. The emphasis is first on mechanical cleansing of wounds with soap and water. Minor abrasions are painted with an aequeous solution of merthiolate 1:1000. This causes no stinging. Should the lesion seem more important, e.g. an animal scratch, mild tincture of iodin is applied. The children are told beforehand that this application hurts some, and they stand the pain very well. Children are instructed in physiologically correct principles in the application of light dressings, in the favorable effects of drying most wounds, and in the wisdom of avoiding plastering wounds with multiple unprescribed ointments. A thriving, enthusiastic corps of Junior Nurses has the guidance of our school nurse, who has instructed them in many practical phases of health teaching. The varied activities of the school program offer frequent opportunities for the study of problems with a health implication, such as food and safety. General supervision of the health of teachers, assistants, and food handlers, and alertness to general hygenic conditions are included in the responsibilities of the unit.

'Birthday' health examinations and bi-monthly measures of height and weight are designed to give those dealing with the child knowledge of his health status and progress, and to give the child an experience of importance in fundamental health education. The occasion provides an opportunity for confidences, and for information concerning his health and his subjective ac-

ceptance of his body. The records of oral inspections, x-rays, and casts, as made by a graduate dentist, furnish the basis for advice to parents on conditions which should have correction.

By attentive study and generalization of the findings on the relation of health and growth to education, it is believed that a health unit in a school is in a position to make a contribution of major importance.

* * * * *

School Nurses at Joliet.—In her ability to get done the things that ought to be done, the public health nurse has very few peers. Quick to recognize needs which often escape the less sensitive, she is remarkably resourceful in finding the means to remedy unsatisfactory conditions. Her usefulness can scarcely be exaggerated.

Among numerous reports from school nurses illustrating these characteristics, one from Joliet is typical. When 22 per cent of the school children were found in September, 1936 to be underweight, an extra ration of milk was provided daily to each of these youngsters, parents being persuaded to supply about one-third and civic-minded community agencies being prevailed upon to furnish the remainder of the 11,132 gallons consumed. By May, 1937, only 9 per cent of the children were underweight.

Further tangible evidence of results obtained in health improvement appears in the record of physical inspection. Defective teeth were found in about one-fourth of the children when first observed (2,034 out of 8,435) but by the end of the year, corrective dental work had been done for three-fourths of these. In one way or another, correctibe medical service was provided to those found with defective throats, noses, eyes, ears, etc., and a remedy found in a majority of cases. Many were vaccinated against smallpox.

Of particular interest was the holding of child guidance clinics. Among 28 problem children examined in these clinics, only four were rated as having normal intelligence. Care in institutions for the feeble-minded was recommended for six. Special training was prescribed for the other eighteen who appeared to have possibilities of useful life. This sort of service is believed to be fundamental to the prevention of crime on the one hand, and the salvaging of human resources on the other.

To get these things done, the nurses brought together the resources of the community that were available for such purposes. In addition to the limited public funds, these included personal and financial assistance from a local dental club, the Business and Professional Women's Club, Kiwanis Club, Public Health Council, Red Cross and Parent-Teacher Association.

Work no less splendid in numerous other communities might be cited. Wherever located, the public health nurse is found on the firing line of community effort in protecting and promoting health.—Illinois Health Messenger, December 1, 1937, page 148.

NUTRITION IN THE SCHOOL HEALTH PROGRAM*

MARY DE GARMO BRYAN
Teachers' College, Columbia University, New York City

The program for school health and health education is rightly a co-operative one, and I wish to express the appreciation of Miss Lute Troutt, the President of the American Dietetic Association, in being asked to participate in this symposium on the contribution of the health science professions to that program.

Physicians, especially school physicians, are well aware of the importance of good nutrition to good health, particularly in the case of children. Todd aptly says, "The adult physical pattern is the outcome of growth along lines determined by heredity but enhanced, dwarfed, warped, or mutilated in its expression by the influence of environment in the adventurs of life." Nutrition is often the dominant environmental influence, and undernutrition or malnutrition resulting from inadequate or unwisely chosen food is only too familiar.

For our purpose here it is important to stress but two of the evidences of recent research in nutrition:

1. Though the same chemical substances are involved in both nutrition and growth, in growth the needs for some substances are significantly accentuated. A shortage of any essential factor becomes more quickly and strikingly apparent, and is likely to be more harmful than in the case of an adult.

2. It is evident that current dietary "standards" for an adequate diet could profitably be increased with respect to some of the minerals and vitamins. Common practice is to set allowance for iron and phosphorus 50% above average requirement for equilibrium; calcium should be increased to 100% during growth. Vitamins A and G and possibly C increase nutritional well-being up to 3 or 4 times the amount demonstrably needed for average health and growth. Nutritional standards are rising. It is no longer enough to aim at an adequate diet where striking improvements result from optimum feeding.

Realizing the importance of optimum diet during the period of growth, the actual situation becomes all the more serious. It is likely that only minimum requirement levels are met in the consumption of some important foods. For example, a study by the F E R A of 25,000 families having children in school in 61 cities, showed a per capita consumption of 6/10 of a pint of milk per day, 27% below the lowest level, and 57% below the lowest desirable level advised by Stiebling and Ward as a result of current knowledge of calcium metabolism. The consumption of other "protective" foods is frequently all too low. Some reasons for this inadequate diet may be economic

*Abstract of paper presented at the annual meeting of the American Association of School Physicians, October 3, 1937.

but others are, without doubt, lack of knowledge about foods and their importance, and lack of a liking for certain foods.

The efficiency of the school child as a pupil, his future health, happiness and efficiency all demand the putting of much time and thought into the patient and persistent education of the child to an interest in and a knowledge of food and good food habits. This may be done in several ways:

1. By including units on nutrition in health education instruction: In many schools this material is taught by a home economics teacher trained in nutrition, or by the school nutritionist. The latter is a recent but most important addition to the health staff of the school, and in a few instances is the supervisor of both nutrition and health education. In other systems, the school nutritionist or the nutritionist in the Department of Education or the Department of Health works directly with the classroom teachers in developing these units which are then presented by the teachers as a part of their health teaching. As an illustration: In Newark, nutrition and foods teaching is a part of the activities program in the first three grades. From the 4th through the 8th grades, three health education units are given each semester, of which one is nutrition. The subject-matter is carefully integrated with other studies, and interests are developed in each grade. Growth records are taken three times a year by the nurse and the classroom teacher. Children are referred to the school physician if they are losing weight, or if they are underweight and failing to gain weight. The four year health curriculum in high school is required of all students. In this curriculum the second half of the first year is devoted to nutrition, taught by the nutrition and health teacher.

2. By maintaining informal nutrition and dental clinics or consultation services for children referred by the school physician or school nurses: This service is offered by the school nutritionist where she exists, or by the trained dietitian in charge of the cafeteria, or, in the smaller communities, by the state nutritionist. In Massachusetts, for example, the nutritionist in the Department of Public Health, with the help of the school nurse, visits families of children having defective teeth and gums which seem to be due to malnutrition, and works with other community workers to meet their needs.

3. By teaching outside of classrooms: In many cities and rural communities this teaching program reaches parents through group meetings, children, through talks at assembly, rat feeding demonstrations carried out by the science teacher, exhibits of foods, library references, and eating practice surveys conducted by the children themselves:

4. By teaching food selection through the school cafeteria: This is an important method of teaching, not entirely appreciated as such. Managers are rarely listed as members of the health councils, nor are they included in studies of school health programs or activities; yet they contribute vitally to the health of children by furnishing them proper foods. In addition, habits of food selection can be taught better through foods offered daily to children

during all their school years than by any other method. School feeding should surely be included in the health program, and closely correlated with relevant classroom teaching. In this connection, it is important to stress the great contribution to the health of school children through the W P A projects of feeding a warm nourishing luncheon at school to hundreds of thousands of indigent children of school age. Many physicians are of the opinion that this step has prevented any alarming rise in malnutrition—with its attendant dangers—during the depression.

Due to the management of cafeterias by untrained persons or by concessionaires, or through operation of them as profit-making enterprises for the support of other school activities, alarmingly poor lunches have been served in many communities, particularly in senior high schools. Recently, however, it seems that boards of education and parents are beginning to appreciate the health and educational responsibilities of the lunchroom. Trained dietitians in large numbers are entering the school cafeteria management field. State nutritionists and home economics extension workers trained in nutrition are working with managers and cooks in small or rural schools. Every device is used to provide the best possible food at lowest possible cost to the children.

Physicians can greatly speed progress in the use of nutrition teaching and good practice of nutrition throughout the school system. Frequently they seem to be interested primarily in the sick children, and, as far as nutrition is concerned, only with those requiring special feeding. But all children must be well fed in order to be well, and I bespeak, therefore, the support of this group of physicians with that of dentists, nurses, and certainly of psychiatrists, for this important aspect of health education in its many phases.

With other health science professions, the dietitians and nutritionists appreciate the opportunities the school offers for making their contribution to the health of the school child. As comparative newcomers to the field, they need the support of the representatives of other health science professions in order that, through the classroom, the nutrition clinic, the parents, and the school lunchroom, they may function effectively.

* * * * *

Orthopedic Service.—The department of health of Saskatchewan has established a special orthopedic service at the Grey Nuns' Hospital, Regina, for treatment of residual paralysis arising out of a recent outbreak of poliomyelitis. The plan includes three weeks of treatment with medical and hospital care and transportation paid and special splints gratis. It is also a part of the plan to have the child's mother or some responsible person spend three days at the hospital for instruction in continuing the treatment at home. It was estimated that of 445 cases of poliomyelitis there would be at least 100 patients requiring treatment. Journal, A. M. A., December 18, 1937, page 2077.

NEW DEVELOPMENTS IN THE CURRICULUM IN HEALTH AND PHYSICAL EDUCATION*

DWIGHT H. RICH
Principal, Eastern High School, Lansing, Michigan

I was asked to present a summary of the work done on the curriculum as it affects health and physical education particularly as it relates to the California study and to the work of the thirty experimental schools. I was not hesitant about doing this, as I realized it would be easy to get the history of those studies from the various headquarters. Unfortunately for me these did not yield the necessary information.

It is necessary, as we proceed to think of new developments in the curriculum, that we check our own thinking and our own philosophy of education to see if we are in a position where we are able to see the new. If we are unable to do this, it stands to reason that our public will not be. In this manner the job becomes one of self education as well as that of educating our public.

Thinking in terms of the needs of youth of today, we find him living in a far different world than did the young people of just a few years back. We hear a great deal about a changing social order, and this is making it necessary that our educational program contribute more than it has in the past in the way of helpful experiences that may be used outside the classroom.

There are being made at every turn, more and more demands upon human beings. This causes a greater drain upon people's health than ever before. The school must recognize this need, and put something into the program that will benefit the habits and practices that carry over into the lives of youth after the school days are over. This is what is being attempted under the new curriculum.

We have been too much inclined to make an effort to teach better those things which have been taught in the past, without noting whether they were desirable to keep in the school program. Now education is regarded as a progressive, growing experience that has no end but the grave, and the school program is regarded in terms of habit formation that carries over after the individual leaves school.

Hefner of California says that the revolutionary thing in the reorganized secondary school program is that it is based upon the answers to three questions:

1. What changes do we want to take place in boys and girls?
2. What activities can we provide that will bring about these changes in boys and girls?
3. What observations are going to be made to show that these activities for youth actually carries it through the changes we have planned?

This certainly makes us see the individual pupil as the one on whom attention must be focused in our progressive curriculum. The measuring rod of success must be changed from that of conformity to standards to that of

measuring progress made in each individual life. This cannot be something that can be put on and taken off as a coat. It must be habit formation.

Do the boys and girls with whom you deal actually take exercise because it is a habit with them?

I am conscious of the fact that many physical education programs are planned for group games and competition only. A certain amount of this is justified, but certainly ignores that big phase of educational development—the individual phase.

This new development calls for enjoyment along with the physical activity. Psychology teaches that the essential factor in learning is to associate pleasure with the activity.

Physical education instructors are inquiring into the types of homes from which these pupils come. They want to know the advantages or lack of advantages that the pupils are experiencing. This has presented the factor of social advantages. Do pupils come from homes where social experiences are provided? Have they had the opportunity of learning to play together with other folks?

The answer to questions like these has led physical and health education away from narrow specialization into an organization founded along the lines of broad subject matter fields. We are recognizing the fact that the child must be taught and not the subject.

This is bringing about much experimentation in the field of integrated health programs. One such experiment is being conducted at the present time under the supervision of L. W. Webb of Northwestern University in which some eight or ten schools are active. This was considered of sufficient importance to be given a place on the program of the North Central Association. The thought in this experiment is more on the product of education. Physical education is being correlated very closely with the work in other classes such as biology, physics, and home economics. These schools permit teachers of other subjects to be borrowed by the physical education and health departments to teach their particular part of the work at the time it comes into the course of study. This means hiring substitute teachers to relieve the regular teachers of their own classes at these times.

People outside the school system are asked to come in and talk to the pupils, if they can do a better job than the teacher. Much attention is given to initiating and establishing health habits.

The benefits to the children are closely checked. This experiment is well worth watching and studying.

The social angle is being stressed. Youth must be given the chance to develop ease in social groups. This leads to the placing of social dancing within the curriculum. Much unhappiness and maladjustment has caused a number of adults (because they do not know social customs and how) to adapt themselves to situations of a social nature.

It is found that social dancing tends to teach manners and courtesy along with improvement in dress. Schools in Los Angeles, Campbell, and Oakland, California, do much social dancing. Most of the programs are run on school time, and as regular scheduled work.

These schools organize activities in which boys and girls play together frequently—at least once per week in high school. Some of these activities are, in addition to the social dancing, archery, golf, tennis, and group games. All the high schools are urged to organize their programs so that boys and girls at stated intervals shall share together the play equipment and the services of the instructors. Insistence is made on having a spirit of fun and enthusiasm present during the lessons.

Health education appears to present one of our greatest shortcomings. Something must be put into this program about the whole matter of habits, interests, and tastes that carries over into life practices.

Phases of vital importance are physical exercise, mental adjustments, health practices, social adjustments, and drives for healthful use of leisure time.

Again referring to Hefner of California, it is found that a sound program may be developed by (1) Analysis of the curriculum offerings for the purpose of determining whether there is adequate emphasis upon items of primary concern in the development of the health and physical objectives. (2) New activities must be developed to supply materials where shortages have been discovered, namely, health information and attitudes, tests in reference to physical activities and health, habits, leisure time activities, supplying information and building sound attitudes in relation to heredity, sex, and parenthood. (3) Spreading the philosophy and principles of health and physical education to all teachers within the school plant.

Other elements of the program, such as activities of both curricular and extra-curricular nature seem to follow closely the activities such as we find in our schools. Many schools appear to place a strong stress on athletics as such. It is interesting to note the professional trend in California is for a five year course in preparing instructors in physical and health education with the added statement that these people should seek the benefits of summer schools, as the statement says further that teachers in this particular field are negligent in returning for summer school instruction.*—Bulletin of the Michigan School Health Association, September, 1937, page 4.

* * * * *

Dental Defects.—Dental defects aren't limited to any one stratum of society or degree of intelligence. The problem of teeth extends through life. Dental caries is our widest spread disease. We can't legislate on human hygiene but we can educate. John Sundwall, M.D., Board of Directors, Good Teeth Council; President, American School Health Association.

SALARY STANDARDS FOR SCHOOL PHYSICIANS

EARL E. KLEINSCHMIDT, M.D., D.P.H.
University of Michigan

It is quite generally recognized that many school health workers receive inadequate compensation for their services. That this has been especially true of the school physician, is indicated by remarks such as the following: A prominent member of the American School Health Association asks, "Why should nurses and physical educators receive twice the salary of medical inspectors? Why should a medical inspector be paid only $750.00 per year to examine 2,500 school children and be responsible for their health supervision?"[1] Another physician writes, "The salary scale of school physicians in this State (Pennsylvania) is unjustly low. In many instances they are paid less than a teacher, a nurse, or a physical educator. Rarely do they receive the annual increment granted to teachers and others. The same is probably true in other states."[2] From Massachusetts it is learned that:

> In the Public Health Bulletin of the State Department of Public Health of 1917, there appear some statistics on School Medical service which are as follows: There are 578 physicians, their salary in 7 towns is nothing, in 215 places it does not exceed $100.00, in 62 places it is between $200 and $300. In the majority of places service given is not more than 2 hours a week. The examination consists of an inspection for skin diseases and pediculosis, and for abnormal conditions of nose and throat. Sometimes the teeth are inspected and the general condition noted. In 31 places records are kept on cards or sheets.
>
> Much water has run under the bridge in 20 years. Now there are 529 physicians with an average salary of $522.25 who are provided with standard record cards for recording a far more complete health examination than that mentioned above.[3]

Undoubtedly, this analysis must have included many of the smaller towns as well as cities in the State of Massachusetts. Data secured by the writer from other states in a recent investigation[4] serves to indicate that, while low salaries are received by some school physicians, others are paid salaries more nearly commensurate with their training. This survey included 77 school physicians selected from 22 states (and 3 provinces in Canada) 87.7 per cent of whom were located in cities of 10,000 or more population, and hence rep-

1. "School Physicians Poorly Paid," *School Physicians' Bulletin,* IV, No. 1 (January, 1934), pp. 11.
2. Bortner, Clayton E., "An Appeal for Better Compensation," *School Physicians' Bulletin,* III. No. 5 (May, 1933), pp. 8.
3. Moore, Fredrika, "What Can Be Done About It?" *Contact Between the Massachusetts Department of Public Health and School Health Administrators and Medical Officers,* II. No. 4 (March, 1937), pp. 4.
4. The Educational Qualifications of the School Physician. Report of a Committee of the American Association of School Physicians. American Journal of Public Health. XXVII (April, 1937). Special supplement.

resentative of the larger school systems in this country. It was found that the median salary of the full-time school physician engaged for the period of 12 months of the year was $4,082.83. For full-time physicians employed for a period of 9 or 10 months of the year the median salary was $2,999.50. Part-time physicians employed in the schools on a 12-months' basis had a median salary of $1,124.50, and the median salary on a 9 or 10 months' basis was approximately $1,000.00. These findings undoubtedly represent the more encouraging side of the situation.

The effects of inadequate compensation on the individual are the same in the field of school health as in other fields of work. The enjoyment usually associated with professional activities is greatly diminished because of the lack of assurance of economic independence and worry in the anticipation of a penniless old age. Financial anxiety becomes associated with despair because of ambitions which cannot be realized. Lowered efficiency is the result. The school system on the other hand suffers as a consequence, and also because the compensation offered for service is insufficient to draw into their employ and to hold those better qualified for these positions.

The law of supply and demand also contributes towards the lowered economic status of school health workers. In every town there is some physician just beginning practice who is willing to devote a few hours a day in the schools. He is not interested in school health as a profession, and may be willing to sell his services reasonably, so why should the penny-wise board of education which sees no need for any specialized training for this position pay any more? Moreover, when economic conditions as a whole are not at their best, it is frequently considered the best policy to give home town practitioners first chance at the job.

Lack of appreciation for the work of the school physician may originate in the admiration of the public for the unusual; in part, it may be responsible for the existence of inadequate salary standards. There is little that is spectacular about the field of preventive medicine and school health as there might be, for example, in the work of the surgeon. Consequently, the qualifications and training of the school physician are frequently minimized. In fact, there are people who have the idea that the school physician is engaged in this field of activity because he would be unsuccessful as a medical practitioner.

The fact that the physician's years of preparation and the cost of his training are frequently ignored, and that he is not given the same consideration as members of the teaching profession, is revealed in the following incident. Recently, the writer had occasion to discuss the problem of salary standards of school personnel with a woman member of a board of education from one of Michigan's largest cities. It was her opinion that a teacher should be paid on the basis of the amount of training, experience, and years of schooling she had had rather than on the basis of the grade she happened to be teaching. The salary of the school physician, which by the way was

very inadequate, was also mentioned. In this instance she insisted emphatically that the school physician could never be paid on the same basis, particularly when she learned of the training necessary for this position.

Edmonson and Lewis[5] list several factors as having their influence on the salary schedules of teachers. Undoubtedly these also play some part in the determination of the school physicians' salaries. Those mentioned include such considerations as the religious composition of the community, the number of foreign-born, the economic status of the people, the location and customs of the community, the practice in comparable communities, the age, sex, and marital condition of the candidate, etc. To these one might add the health consciousness of the people in the community concerned. Are they sold on the health program in question?

Granted then that the salaries of many school physicians are inadequate, and that there are many and various factors which contribute towards this situation, let us consider briefly what these salary standards should be, and what may be done to bring about their adoption.

Primarily, it should be rather important that the school medical officer be carefully chosen because of his high personal qualifications, professional preparation, and his experience. As in the case of other special positions in the school system,[6] his situation should be considered a unique one, and he should be paid accordingly in view of his special qualifications and training.

Regarding his compensation, Wood and Rowell state, "Standards for pay for different positions vary considerably, but for efficient service, pay must be ample to warrant the expenditure of maximum time and interest by the employee. The figures below are suggested as a minimum for which efficient service could be expected from persons other than enthusiasts who enter the work as a pastime. Health Supervisor (Director of Health Program), four thousand dollars and upwards. Part-time physicians, on the basis of two hours per day guaranteed during the forty weeks of the school year, five days per week $2.50 to $3.00 an hour or one thousand dollars per year, preferably on an hourly basis. Specialists, never less than one thousand dollars per year on a part-time basis or hourly pay slightly higher than regular physicians since the specialist commands higher fees in practice."[7]

As in the case of the teaching profession there should be a small automatic annual salary increase each year for a period of years while competency is increasing. Special achievement and the securing of additional training or special qualifications should be rewarded by an increase in salary. The cost of living must also be considered. Douglass,[8] in an investigation of

5. Edmonson, J. B. and Lewis, Edwin E., *Problems in the Administration of a School System.* No. 4. Bloomington, Ill.: Public School Publishing Company, 1924.
6. Cubberley, Elwood P., *Public School Administration.* Boston: Houghton Mifflin Company, pp. 268-9.
7. Wood, T. D. and Rowell, H. G., *Health Supervision and Medical Inspection of Schools.* Philadelphia: W. B. Saunders Company, 1927, p. 78.
8. Douglass, Bennett Cooper. *Professional and Economic Status of the City Superintendent of Schools in the United States.* (Doctorate Thesis), Columbia University, New York City, 1923.

the salaries of school superintendents, found that there was an increase of 41 per cent as shown by the difference between the median salary of 1913-1914 and that of 1920-1921. At the same time the cost of living was advanced 100 per cent. Lags such as this undoubtedly took place in other salaried positions during this same period, and are strikingly true at the present time.

The length of the contract of the school physician must be such that he will be ensured of an opportunity to do a creditable piece of work. Douglass makes the suggestion regarding the superintendent of schools that the original period of employment be three years, and that, if the services of the superintendent are satisfactory to the board of education so that he is continued in office, it be understood that the term of the superintendent be three to five additional years. A similar tenure of office should be provided the school medical officer.

Likewise there should be provision for a pension system for school health workers, as well as the teaching profession. This would safeguard the welfare of those who have devoted long years of their lives to this work.

For school physicians to secure these advantages, the rendering of efficient service plays its part; but it is not sufficient. The public and school authorities must be taught the values of adequate health programs. Public health including school health must be publicized by the individual and the group. Legislation may be indicated, but most of all, there must be unity of purpose for the achievement of these goals.

Editorial note—The answers to several of these problems rest in making the school physician a full-time employee, subsidization to these positions by means of state funds, and standards of special training, set by the state, beyond those of the usual M.D. degree.

* * * * *

Use of the Toothbrush.— One of the latest statistical studies in toothbrushing was made in the Netherlands by Dr. J. Bol.* He examined with scrupulous care three groups of men, all between nineteen and twenty-nine years old. Group I of 103 men had never used toothbrush or toothpaste. Group II of 130 men had used brush and paste since childhood, or at least since fourteen years old, and Group III of 98 men brushed their teeth, but had started to do so later in life than the fourteenth year. Group I had 21.5 sound teeth per mouth; Group II 20.9; and Group III 21.6 "These figures," writes Doctor Bol, "show that mouth hygiene, as practiced by these men is, to say the least, ineffective in preventing caries." It is no discovery that toothbrushing may do no good. Dentists know that the wrong kind of brushing from side to side or with harsh abrasives, may do definite harm.
*Health News, State Department of Health, New York, December 20, 1937, p. 208.

PREVENTIVE PAEDIATRICS AS SEEN BY THE SCHOOL MEDICAL OFFICER*

L. P. MacHaffie, M. D.
School Medical Officer, Ottawa Public Schools

The school medical officer in a large urban centre examines and inspects thousands of children each year. He observes these children from the kindergarten on through the grades, from the age of five years to the age of fourteen or even sixteen years — to the period of adolescence. His experience with communicable-disease spread and control should indeed be very great.

The Function of the School Medical Officer.

In my opinion one of the most important roles which should be played by the school medical officer is that of a health educator for the parents as well as the school children. Informal chats with parent groups on pertinent health problems at frequent intervals are of untold benefit. Especially should these be of benefit during epidemic times, when parents can be informed of the value of the recognized methods of immunization, of the early signs and symptoms of communicable disease, of the importance of keeping sick children at home from school on the slightest indication of early symptoms of measles, whooping cough, etc., and of the very great necessity of isolating the baby, and if possible the toddler, from the non-immune brothers and sisters who presumably might develop these diseases. The school medical officer should also offer guidance to the teachers in making available and helping to select health teaching material.

The Preschool Child.

I am convinced, as the result of several years' examinations of thousands of school children, that a great many children enter school saddled with defects which should never have developed if adequate attention and supervision had been given during the preschool period. The most frequently neglected defects are strabismus, enlarged tonsils and adenoids, discharging ears, deafness, dental defects, flat feet, poor posture, juvenile goitre, and malnutrition. How many mothers are there who feel, once the period of meticulous care in the first and part of the second year has passed, that careful guidance and supervision are unnecessary? I feel that there are far too many. Certain essential health rules must be observed in this period and, if they are not observed, dire consequences may result.

Another reason for pitfalls during this stage of the child's development is the parents' lack of knowledge of vital health considerations and their unfamiliarity with the potential dangers of the apparently benign defects which appear from time to time. Whereas parents realize the importance of frequent periodic health examinations during the first year of life, very few appear to realize that the period following infancy should likewise receive

*Abstracted by Earl E. Kleinschmidt, M.D., from the Canadian Public Health Journal, October, 1937.

frequent supervision. That all-too-prevalent tendency of waiting to call the doctor until illness develops is regrettable.

Dental Defects and Their Solution.

The appalling number of dental defects in children three to six years old should cause the deepest concern of all public health workers. This shocking state of affairs would not exist if, from the third year, semi-annual trips were made to the dentist. Unfortunately, many poorer people and those on relief are unable to obtain prophylactic dental care and attention to early caries in the preschool child and, to the best of my knowledge, there is no place where they can obtain it free in most cities and towns.

The Need for Medical and Dental Clinics for the Preschool Child.

The ideal preschool clinic should offer the following services:

(1) An annual medical examination, including an examination of the urine, a tuberculin test, and one Wassermann test.

(2) Advice on health habits and food habits, with the free distribution of literature on these subjects.

(3) Disposition of defects: Tonsil and adenoid cases, ear conditions, flat feet, strabismus, malnutrition, etc., referred to hospital clinics for treatment. Tuberculin reactors referred to the proper local authority, and positive Wassermann cases similarly referred to the proper authority.

(4) Preventive services: These should include vaccination against smallpox before admission to school; diphtheria toxoid if it has not been given previously; and any of the newer methods of immunization which are at present on trial and which may later prove to be effective measures.

The ideal preschool dental clinic should offer a bi-annual dental examination for children three to five years old, and should be equipped to treat early dental caries. It should also provide personal instruction in dental hygiene and the free distribution of brief and pertinent literature.

The School Child.

I should like to make some personal observations on certain defects encountered in school pupils, not necessarily the result of preschool neglect.

MALNUTRITION.

My observations lead me to believe that great numbers of school children are inadequately nourished. My conclusions have not been solely the result of analyzing growth and weight charts of 10,000 pupils annually for six years — but average height and weight data for age, along with growth and weight trends, offer most useful yardsticks. My opinions are principally based on the physical examination and the reaction to environment of the child. I am not in agreement with some authorities that malnutrition is as common among the well-to-do as it is among the poorer classes. It is true that there are many exceptions: the "only" child, who has been pampered and catered to all his life is sure to be unhealthy, and now and again one

sees vigorous, robust, healthy children in the lowest stratum of society. I am definitely of the opinion, also, that physical defects are not the principal causes of malnutrition. It has been particularly easy to observe this in our Ottawa schools, for in some of our schools the greatest proportion of the pupils come from families living in crowded quarters.

Poor Posture.

A great deal has been written abut poor posture. Unquestionably, the erect child or adult is a rare species, for erect posture is difficult to obtain and maintain. I feel that it never will be obtained in all our school pupils unless ideal care can be directed to the child in the period of infancy and the preschool period. Granted these prerequisites, then, provided there are good health, correct food and living habits, freedom from defects and absolute freedom from chronic fatigue, during the school period, a great many children would, I think, stand erect.

Defective Vision and Eye Strain.

School authorities find that from 15 to 20 per cent of school pupils suffer from some eye defect or symptoms referable to that organ. I am quite in agreement with these figures. I have visited several schools in different towns and cities, and in doing so have taken particular notice of the lighting facilities. These observations, along with deductions from various articles appearing from time to time in medical and school journals, convince me that defective school lighting must to a great degree be responsible for visual disturbances. Glare, direct or indirect, or poor quality of light should be vigorously combatted by proper attention to the boards and by the judicious use of blinds of the venetian type. By far the best arrangement of blinds is to have two hung at the centre of the window so that there may be independent control of sunlight entering through either sash.

Tonsils.

How many illnesses of middle life are attributed to focal infection from bad teeth or bad tonsils? How frequently is tonsil removal advocated at this period, after the damage has been done? If tonsils are such a menace to adult life — and we know they are to child life — why not as a prophylactic measure have 90 per cent of them removed in early childhood? This may appear to be a far too radical procedure. If focal infections were removed at their earliest appearance, or potential sources of focal infection were removed in early childhood or at the adolescent age, how many cases of duodenal ulcer, chronic arthritis, choleocystitis, anaemia, coronary heart disease, etc., would be avoided in later years? Why wait until the damage is done?

Communicable Disease Spread and Control in the School.

My personal feeling in respect of communicable disease in urban districts is that health authorities can do very little in the school to prevent the spread of measles, German measles, mumps, chicken pox, and possibly whooping cough. If the pupils of each classroom in every school, during epidemics,

were inspected each morning by a physician or a nurse who was expert in detecting these diseases in their very earliest stages, there might be some lessening of contagion if suspects were excluded; this, however, is impracticable. Nevertheless, occasional classroom inspections must be made by the nurse during epidemic times in order to prevent children suffering from communicable disease from sitting in the class, and in order to encourage the teacher to assume a greater measure of responsibility in this respect.

THE PHYSICAL EXAMINATION.

In the majority of instances the physical examination reveals very little more than does an inspection and examination of the ears, nose, throat, mouth, vision and general appearance. It is true that one may discover certain heart conditions, but these could be quite as easily detected by slipping the flat type of stethoscope under the clothing. School health service rooms are too noisy to permit of satisfactory percussion, and the stethoscope does not reveal childhood tuberculosis except in certain marked cases, and then it may only be suspected. Tuberculin tests and x-rays have supplanted the stethoscope in the detection of pulmonary tuberculosis. Our search for pulmonary tuberculosis should be confined to secondary school pupils.

URINE EXAMINATION.

One very important test should be performed if we are to call these examinations complete; viz. urine examination. Pyelitis, diabetes, and albuminuria have many times been encountered in urine examinations by our Ottawa Public School health services. This test should, ideally, be done as a routine but health service staffs are not large enough to permit this. In my opinion, school medical officers who are too busy looking at teeth, tonsils, etc., to give time for this service, are missing great opportunities to confer benefit to many children, and are many times giving ill children a clean bill of health. A note informing a parent that Billy or Johnny is pale or undernourished, except in the well-to-do classes, will very seldom result in a urine examination. I definitely feel that the urine examination in selected cases constitutes a vastly more important examination than a stethoscopic one.

* * * * *

Promotion of Dr. Gudakunst.—Don W. Gudakunst, M.D., has been appointed Health Commissioner of the State of Michigan. For the past eight years, Dr. Gudakunst has served as deputy health commissioner of the Detroit Department of Health with which he has been associated for the past fourteen years. He has been in charge of the school health service, which in the City of Detroit is under the supervision of the City Health Department. Dr. Gudakunst is a member of the Governing Council of the American School Health Association, representing the Michigan School Health Association. Congratulations to Dr. Gudakunst on a well earned promotion, and to the State of Michigan on securing the services of a well trained, experienced, energetic Health Commissioner of outstanding ability.

EDITORIALS

"Treat him well, for he is also someone's son." T'ao.

The complaint of Dr. C. Paul White of Kewanee, Illinois (see page 51) concerning the present basketball rules brings forcibly to mind the urgent need for more adequate control of physical education activities, particularly athletic competition, by those whose major interest is in the health and education of pupils and students. Too long have physicians and educators sat supinely by, while rules for competition (as well as the permission of outrageous violation of proper sanitary precautions) are made and controlled by persons suffering with acute exacerbration of chronic "spectatoritis." To these persons, the interest of the spectators, and therefore the size of the "take" at the admission gate, is of greater moment than the welfare of the boys whom trusting parents, — seemingly often times foolishly trusting parents -- have placed in the care of coaches, trainers, and rule makers

The elimination of the center jump — except at the beginning of each half — from basketball was brought about largely for the purpose of saving the playing time used in this method of putting the ball in play after a basket has been made. It was done to make a "faster" game so as to keep at a higher pitch the excitement and hysteria of the lookers-on. There is nothing evil in such a motive, if no harm results to the players. Dr. White emphasized his professional belief that harm does result. The time spent in getting the ball in play by means of the center jump gave to the players an opportunity for a "breather," during which the proper physiological balance between fatigue products piled up in the body cells and the oxygenation of the cells might be partially restored.

Already basketball was probably the least beneficial of our team games. Frequently, particularly in high school gymnasiums, the conditions are not good. Into a room, the ventilation of which has been planned for a gymnasium class of fifty, are packed hundreds of spectators, usually crowded close to the side lines. The air soon becomes foul and overheated, so that a game that at best is a severe tax on the circulatory system, becomes more of a tax. Too, the proximity of spectators — often of the "town sport" variety — and their remarks, incite the players toward unsportsmanlike acts, and bring discredit upon players and school, and upon educational procedures, at least upon this one.

As Dr. White suggests, this "speeding up" is peculiarly dangerous in smaller communities where the size of the school make impossible a sufficient number of skilled substitutes. Hence, a few are *compelled* to play throughout the whole game. Moreover, this change has added materially to the total energy expenditure of the game. It has been estimated that the actual numbers of minutes the ball is in play has been increased 25%. To adolescent school boys, many of whom are still in the period of rapid growth, this is a serious added burden.

Since the foregoing statements were written an article appearing in the Buffalo Courier-Express of January 21 indicates that the insatiable Molock of too intensive interscholastic athletic competition has reached down into the seventh and eighth grades. In Indiana, according to this report, basketball tournaments conducted for teams from these grades are being investigated by state authorities. Forty teams completed a tournament in three days, each team of these immature boys being compelled to play two games each day. Thurman B. Rice, M.D., is quoted as saying that two deaths have occurred in Indiana this year as a result of basketball.

All these factors indicate the need of leaders and organizations in charge of secondary school athletics working out and using rules of their own, that should make competitive team games safer, and perhaps more valuable in other ways, for adolescents. This might well be done by State Interscholastic Athletic Association or by the Federation of High School Athletic Associations.

It is time that parents take this and similar situations in hand, and insist that nothing shall be countenanced in the schools that is not for the physical, social, and educational advancement of their children. — C. H. K.

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The text reviewed on page 60 of this Journal — "Twenty-Five Years of Health Progress" — emphasizes what any scrutiny of the vital statistics record over the period covered would bring to view.

The improvement in death rates — the addition of 30% to the span of life in the United States in a quarter century — has been due almost entirely to the great advances in the sanitary and medical sciences: to the better control of communicable diseases. The steps leading to this improvement have been made possible by the public health groups and by the physicians of America. By and large, the public have not brought about these gains. In fact, in general they have acquiesced only, and then often only through legal compulsion.

From now on, the law of diminishing returns must operate so far as improvement in death rates due to communicable diseases is concerned. Future gains depend on delaying deaths due to diseases of degeneration. These, in turn, depend specifically on the habits of the individuals rather than on group coercion. Improved habits in daily living rest basicly on better and more widespread information and resulting improved attitudes concerning such health factors as diet, rest and sleep, recreation and exercise, outdoor air and sunshine, and at least annual check-ups on one's own physical condition.

This drives us back upon education; health education so called. For success, we must depend on better led and better organized school health activities, particularly health training and instruction — hygiene teaching. While a few scattered communities are making sincere effort in this field of education, the vast majority of them are apparently making little. This is evidenced by the lack of any real programs in the schools, particularly at the

secondary school level, and by the general lack of true health information among young men and women entering colleges and universities.

For success, there are certain basic essentials: a time allotment in secondary schools of at least one full class hour weekly devoted to the study of health training and instruction; a scientifically developed course of study so that the time may be used effectively; text books whose content will stand the tests of sanitary and medical sciences, with its material arranged to meet the age level of the pupils, and interestingly written; and a trained, informed, and interested personnel guiding and teaching in this field.

In what particulars do the schools in your community meet these essentials? — C. H. K.

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ABSTRACTS

Basketball Is Too Strenuous.—*To the Editor:*—Basketball, as it is being played today, due to the present High School rules (College as well) is a game which is played by thousands of our boys, and under the present rules has been speeded up to such an extent that, in my opinion, it is actually dangerous.

Recently a boy in a nearby town collapsed at the close of a game and died an hour later. I witnessed a game between Rock Island and Kewanee last Friday night, which was extremely fast, and at least six of the men played the entire game. There is no rhyme nor reason to the committee on rules which are attempting to speed up the game for the pleasure of the spectators, not taking into consideration the players, and in my opinion, it is time the medical men of the state used their influence to have this matter corrected.

Very truly yours, C. Paul White, Pres. Kewanee Board of Health.

P. S. Enclosed is a copy of a letter I wrote to the President of our Board of Education, in protest:

Dr. H. D. Swain, President, Kewanee School Board, Kewanee, Illinois.

My dear Doctor:

It has been my privilege to attend a few basket-ball games this fall, and as a physician and as President of the Kewanee Board of Health, I feel it is my duty to register a protest on the basket-ball game as it is played today.

Eliminating the center jump has apparently speeded up the game twenty to thirty per cent, which already was fast enough for the physical health of the players.

No matter how well checked these boys are, there are bound to be some players, whose hearts will not, and can not, stand the strain, and in my opinion the untoward effects will far surpass any benefit which might otherwise be gained from this game.

I trust that you will use your influence that the rules may be so changed that a boy must either be substituted at regular intervals or that more rest periods may be forced upon the players to eliminate this great danger. C. Paul White, Illinois Medical Journal, January, 1938, page 10.

Poisonous Wild Plants.— Water hemlock, one of the most poisonous of wild plants in the United States, probably has destroyed more human lives than all of our other toxic flowering plants combined. In springtime, when children are ready to eat any succulent green that tempts them in their rambles over the countryside, the water hemlock (*Cicuta malculata L.*) is not only most alluring but, it is generally believed, most deadly.

Resembling closely its esteemed brethren, the carrot and parsnip, this black sheep of the parsley family lurks in swampy land throughout the eastern part of the country and is found to some extent as far west as the Rocky Mountains. Multibranched and tall, with lacy white flowers and dissected leaves, the whole plant is permeated with a fragrant oil that is most abundant in the spindle-shaped roots clustered at the base of the stem. It is these roots which are chiefly responsible for poisoning of human beings.

The symptoms of hemlock poisoning are many, including violent contraction of muscles, dilated pupils, vomiting and diarrhea. Cases of suspected poisoning, from whatever source, should always be placed in the hands of a skilled physician. Never is medical care more urgently needed than when the *cicuta* is the cause of the illness.

Water hemlock travels under a number of aliases, the most common being "cowbane," "snakeroot," "spotted hemlock," "spotted parsley," "snakeweed," "beaver poison," "musquash root" and "muskrat weed." It has a retinue of lawless wild plant followers that should be shunned by everyone, particularly children.

There is the poison hemlock (*Conium maculatum*) which may be distinguished from the water hemlock by its very large, much compounded leaves, and the fact that it prefers fairly dry ground in the neighborhood of towns while *cicuta* grows in wet places.

Many fatal cases of poisoning have been traced to the wild parsnip (*Pastinaca sativa L.*), a tall coarse-leaved plant of the same species as that under cultivation, which grows wild in waste places quite generally.

The potato family has several outlaw members, notably the thorn apples (*Datura stramonium L.* and *Datura tatula L.*) both stout, large-leaved, ill-smelling plants, producing enormous trumpet-like flowers and fruits bearing many dark seeds. The victims of the thorn apples are usually children who are poisoned by eating the pleasant-tasting seeds in the green capsules or by chewing the great blossoms.

Equally dangerous are the enticing black nightshade with its clusters of white flowers followed by black, round berries, and its close relative, the bitter sweet, a climbing plant with large clusters of red berries. The latter should not be confused with the woody vine, often called "bittersweet" with attractive orange-red fruit, commonly used as a winter decoration. The fruits of the buckthorn, poke, baneberry, English ivy, and daphne are also to be avoided.

From this imposing but only partial array of man's plant enemies, it is plain that everyone should refrain from eating wild plants, no matter how pleasing to the eye, unless they are known to be harmless. Education of school children and others with respect to the identification of these plants and their poisonous properties is of the greatest importance. Finally, in cases of poisoning, a skilled physician should be called at once. The delay of an hour may mean death. Health News, New York State Department of Health, April 19, 1937, p. 62.

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Mantoux Tests In Tuberculosis.—To the Editor:—I have been told that there have been recently some reports that the Mantoux skin test has activated tuberculous lesions in children under 8 years of age. It has been my impression from reading the available literature that the Mantoux skin test, especially given with the purified protein derivative tuberculin in graded dosage, was absolutely without danger to any individual. Will you please let me have the best opinion on this matter, as it affects the skin testing program in the primary schools.—M.D., Ohio.

Answer.—Observation made on many thousands of tuberculin tests administered by the Mantoux method have proved beyond doubt that the present standard dosage is without harm for both children and adults. When Koch's old tuberculin is employed, the first dose consists of 0.01 mg. Large numbers of workers use as the initial dose 0.1 mg. with no evidence of reactivation of previously existing tuberculosis. If there is no reaction to either of these initial doses, it is still entirely safe to administer a full milligram. In fact, some workers use a milligram as the initial and only dose in their testing program, and report no ill effects. Purified protein derivative has been employed in a two-dose test (the dosage differs from old tuberculin but the directions accompany each package) on large numbers of children and adults with no harm whatever; in fact, its safety was carefully, accurately, and definitely determined before it was placed on the market. Already Long has prepared an intermediate single dose test of purified protein derivative, which is also harmless.

In 1935 more than 1,124,363 tuberculin tests were administered through tuberculosis associations. It is probable that an equal number or even more tests were administered in the office of physicians. These figures indicate the extensive use of the test.

Statements to the effect that the test has activated tuberculous lesions in children under 8 years may have any one of several sources. There are still physicians who confuse the intracutaneous tuberculin test of Mantoux with the old subcutaneous test. In the latter, large doses of tuberculin were administered that were sometimes capable of reactivating lesions.

It seems more probable that the source of the statements is an organization in this country devoting its entire time and effort to opposition of good health measures, such as vaccination against smallpox, immunization against diphtheria, and the tuberculin test. Members of this organization are mis-

informed or malicious in intent. They make numerous statements that are false, such for example as that the milk of cows which have had the tuberculin test is very dangerous for infants. In an attempt to alarm the public, they cite cases in a most indefinite manner of persons who have lost their arms because of positive tuberculin reactions; they state that many children have become tuberculous and have died as a result of the tuberculin test. When one attempts to locate the case so reported, they are never to be found, and usually no one in the community or even the family knows of the source of the tale. These persons attempt to leave the public with the impression that tuberculin contains living tubercle bacilli, when in reality whether it is Koch's old tuberculin or purified protein derivative it contains no tubercle bacilli either alive or dead.

On occasions, these persons have been known to distribute at the doorsteps pamphlets containing their propaganda just before a tuberculin testing program is to be initiated This attempt to destroy the testing program may meet with a considerable degree of success. It usually reduces the percentage of consents for tuberculin testing of both children and adults. While it appears successful temporarily, it also creates intense interest in the tuberculin test, so that actual facts may be presented to an alert public.

Probably no one thing did more to hasten the tuberculin testing program among cattle than the demonstrations by the opposition in a few states such as Iowa. The "cow testing war" rated headlines in many of the large daily newspapers, and most papers carried some items concerning it. The absurd propaganda was exposed, and the public convinced that it was definitely detrimental. Therefore the propaganda that is being disseminated in the correspondent's community, if traced, will probably hasten the day when the test will be universally accepted. The Journal of the American Medical Association, October 2, 1937, page 1144.

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Smallpox: A Plea to Legislators.—During 1935, there were 7,904 reported cases of smallpox in the entire country and in 1936 the number was 7,813. *During the first seven months of 1937 there have been 7,693 cases recorded!*

From the study of those gross figures, however, the reason for this large number of cases due to a disease which definitely is preventable cannot readily be understood. It is only when the break-down statistics are scrutinized that the real cause of this deplorable state of affairs becomes evident. Using 100,000 as a unit of population, the incidence of smallpox follows: In the states which have passed laws providing for the compulsory vaccination against smallpox, *and there are only nine* plus our national capital, the incidence is 6.6 cases. In those states which have laws prohibiting compulsory vaccination, the incidence rate was 115.2. New York State Journal of Medicine, January 1, 1938, p. 61.

Health With Education.—At Yale and the University of Minnesota are typical examples of the better and more comprehensive plans of student health services. All persons who matriculate, whether as undergraduate or graduate students must be examined physically by staff members of the university health service. The refinement and exhaustive character of the examination is indicated by the fact that each examinee must have a skin test for tuberculosis. An X-ray picture of the chest is taken of all positive reactors. At Minnesota, and probably at Yale too, the X-ray is repeated at intervals of not more than one year on those whose first X-ray picture shows no evidence of active tuberculosis. This makes possible the detection of active disease when it develops at a very early date when treatment is most promising.

When a tuberculin test is positive, moreover, an effort is made to trace down the source of infection. Family members and others who have been in close contact with the student are requested to be examined in order to detect the spreader of tubercle bacilli. This at least is practiced at Minnesota.

Arrangements are made for the appropriate treatment of those found to be tuberculous. This applies to students, faculty members, and employees alike.

At Yale and no doubt at Minnesota too, the general initial physical examination includes an appraisal of body mechanics and orthopedic conditions upon which is based a prescription of corrective exercises when required.

These references are sufficient to show with what care and energy the health of students is protected and promoted in the modern seats of higher learning. Not only are modern facilities for seeking out and drying up the fountains of contagious diseases employed to a high degree of efficiency, but the student learns by experience and observations under competent guidance how to protect and improve his health in other ways.

Somewhat similar programs have begun to appear in high school systems here and there. The tuberculin testing of pupils and teachers and the follow-up with respect to active disease and the source of infection is now routine practice in some places, Decatur, Illinois, and Minneapolis, to mention only two. A project of this kind has been inaugurated recently in Chicago.

Training schools for nurses are adopting systems no less comprehensive and adequate than those at the more advanced universities and colleges. Not only are the student nurses examined periodically throughout their course of training but all employees in the hospitals are tested for communicable diseases, especially tuberculosis. The nurses, moreover, are required to protect themselves with special gowns and masks and by the practice of strict personal hygiene when working in the tuberculosis wards. Illinois Health Messenger, May 15, 1937.

Physical Education in the Schools.—Messrs. René Ledent of Liége and Charles Dam of Brussels discussed the organization of physical education in the schools before the Société belge d'éducation physique et de sports. The authors discussed in particular the special problems presented by abnormal children. These exceptional children are far more numerous than a person unfamiliar with the facts would suspect and, moreover, they require more medical care than all others. The previous report, in 1934, of an investigating committee provided estimates of the number of children in whose physical upbringing the school physician ought to evince a special interest. According to that report, from 20 to 30 per cent of school children in all Europe were affected with scoliosis and bad posture. In Belgium, 5 per cent of children in the elementary schools receive special care on account of orthopedic disorders. This low figure would lead one to surmise that too few children were receiving needed care. Orthopedists are aware of the slight attention commonly accorded various types of neurolocomotor disturbances and to the frequent neglect from which the crippled child suffers. Physically infirm form 10 per cent of the total group, mentally abnormal 5 per cent. With regard to respiratory disturbances, the authors point out that in some localities the proportion of children suffering from them is only 6 per cent, whereas the figure elsewhere is 40 per cent. The higher percentage would seem to correspond more nearly with actuality. A revision of all statistics, to be based on standardized tests, is recommended.

The authors proposed the following resolution, which was unanimously adopted: The Société médical belge d'éducation physique et de sports believes that physical education, although normally a part of the school curriculum, does not always conform to certain established and recognized standards. Accordingly, the Societe resolves: 1. To see to it that the budgets of all elementary schools contain ample provision for well organized gymnastics, games, and sports among the pupils of all grades. 2. That the medical supervision of physical education be administered by regular school medical inspectors. 3. That these medical officers be selected from among graduates in physical education. The Journal of the American Medical Association, July 31, 1937, page 372.

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The School Board of Boston, Massachusetts, has voted that First Aid instruction be made a part of the high school curriculum.

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A full-time school nurse has been employed by the Board of Education, Independence, Missouri. The project is to be financed entirely from school funds.

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Dental examinations recently made on 1,583 Manhattan, Kansas, school children showed that 894 needed dental services.

Fever Due to Exercise.—Hawke bases his remarks on a study of 2,500 temperature readings from thirty children varying from 3 to 14 years of age. The children selected were those with no physical defects other than the common dental or visual abnormalities. Each child had been admitted because of behavior problems due to maladjustment at home or at school. The temperatures were taken rectally at 6 a. m. before arising, at 11 a. m. before lunch, at 4 p. m. before supper and at 8 p. m. before retiring. In addition to recording the temperature, a note was made of the type of exercise and the activity of the child for an hour or so before his temperature was taken. No specific exercises were given and the children followed out the usual routine of the home. The exercise was, for purposes of analysis, divided into two types: mild, which consisted of school, cinema, council or walking about the wards, and severe, which consisted of sleighing, skating, basketball, and baseball. There is definite proof that exercise will raise the body temperature. The average resting temperature for all the children was 98.2 F. and varied from 97.3 to 99.8 F. When the results are considered after mild exercise it is found that the average level was 99.2 and that 90 per cent of the children had a temperature above 99 F. The average reading after severe exercise was 100.2 F. and in 70 per cent of the children more than 100 F. Every child showed some elevation in temperature after exercise. The height reached in most cases depended on the activity of the child, but in a few cases this correlation was not true, and one must suspect some constitutional factor probably involving the heat regulatory center. The response of the individual to exercise is fairly constant, although occasionally there were marked differences in the readings obtained after similar activities on different days. There is apparently no relation to sex or age, and some of the highest values were obtained from children of 12 years or older. In order to see how long the temperature would remain up after exercise, some of the 4 p. m. readings were checked every thirty minutes until the children were in bed. The time taken for it to fall to 99.2 F., the level of mild exercise, varied with the routine chosen. If the children were allowed to carry on the ward routine, only a few reached that level within sixty minutes, and most temperatures were up until bedtime or later. If the children were put to bed at 4 p. m., most temperatures reached that level within sixty minutes. Journal of Pediatrics, St. Louis, July, 1937. The Journal of the American Medical Association, September 4, 1937, page 825-826.

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NOTES

Lost Time.—Children of Illinois under fifteen years of age have lost an aggregate of 6,500,000 days from school during the last decade on account of scarlet fever, smallpox, diphtheria, whooping cough, measles, and chickenpox. This total is equivalent of 3,611 pupil-years out of the classroom. It amounts to an average of 5 lost days per year, or a full week out of classrooms for each school child.

This estimate of lost time is based on the actual number of cases of the six diseases reported among children of school age and the minimum period of quarantine required by State regulations, and upon the fact that 90 per cent of the incidence of these diseases occurs during the school year. It takes no account of time lost by pupils excluded from school because of exposure to infection or of closing of schools in the face of epidemics.

Diphtheria and smallpox, which together caused the loss of half a million days from school, are easily prevented by inoculation. Every child ought to be protected against these two diseases prior to entering school, and his immunity tested at intervals during school life. Scarlet fever can be prevented by inoculation, 5 doses of toxin at weekly intervals being required. Vaccination against whooping cough is apparently effective. Adequate health service in the schools is effective in combatting all of these diseases and in reducing the amount of illness and lost time which they cause. The question is whether the public prefers to spend money for school doctors and nurses, or permit the illness and loss of time from these communicable diseases to continue unabated. Illinois Health Messenger, November 15, 1937, p. 144.

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Defective Hearing.—This very interesting and practical discussion of the detection and treatment of hearing disorders in children is concluded by the writer's statement of the following facts:

"1. Accurate periodic testing of the hearing by modern scientifically approved methods is necessary for the early discovery, diagnosis, and successful treatment of many diseases of the ear which result in impairment of hearing.

2. The incorporation in the school health program of the regular periodic testing of hearing of all school children has proved to be the most effective single procedure for reducing the incidence of loss of hearing.

3. There is urgent need for the enactment of federal and state laws which will make possible the incorporation in the public school health program of periodic audiometric tests of all school children, especially in rural areas.

4. Increasing interest in the health of the preschool child is a special challenge to the pediatrician, since he has the first opportunity to determine the presence of diseases which threaten the integrity of the organ of hearing. The Early Detection and Treatment of Defective Hearing in Children—Horace Newhart, M.D., Journal of the American Medical Association, November 13, 1937, pages 1620-3.

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Tuberculosis in Public School Teachers.—Although efforts are constantly being made to combat infection of school children by means of skin reactions as aids in detecting the presence of tuberculosis, the same amount of

energy is not being displayed toward avoiding contamination by tuberculous teachers and the personnel of creches and preventoriums. A paper was read by Etienne Bernard and P. Lafosse on this subject at the June 12 meeting of the Paris Tuberculosis Society. A case was cited of a school teacher who had been refused as a recruit by the military authorities because of a pulmonary tuberculosis. Three months later he resumed his activities as a teacher. The incidence of positive skin reactions among his pupils rose to 90 per cent as compared to an average of 30 per cent for children of the same age and environment. A little later, one of the children died of tuberculous meningitis.

A stricter surveillance was urged not only of school teachers but also of the personnel of any institution in which infants and young children are taken care of for prolonged periods. A thorough examination of all such children should include pulmonary radiography at intervals of six months as well as skin reactions, at even more frequent intervals, of all children in schools or institutions where many children are placed in a single room or ward. —Journal, A. M. A., January 1, 1938, p. 58.

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Health Lectures.—The second annual course in public health for all high school students in Crawford County, under the auspices of the Crawford County Medical Society, began September 20. Lectures arranged by the association will be given periodically in nine schools during the school year. The course is planned as an annual project so that after the first four years graduating students will have had thirty-six hours of public health lectures. The program this year is as follows: Infection Resulting from Injuries; Diseases and Care of the Ear, Nose, and Throat; Venereal Diseases; Diseases and Care of the Skin; Diseases, Defects, and Care of the Eyes; The Care of the Heart; Tuberculosis in High School Age; Infectious Diseases of the Respiratory Tract Other Than Tuberculosis; Epidemic Infections of the Central Nervous System (Infantile Paralysis and Spinal Meningitis).—Medical News, Iowa, The Journal of the American Medical Association, November 6, 1937, page 1548.

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MEETING

The annual meeting of the American Association for Health and Physical Education, a Department of the National Education Association will be held in Atlanta, Georgia, April 20-23. Headquarters, the Atlanta Biltmore.

BOOK REVIEWS

Tuberculosis Education.—Elma Rood, The Rural School Press, Madison College, Tennessee, 1936; 25 pages, $1.25.

Professional groups and lay organizations concerned with the education of the public on the causes and prevention of tuberculosis will find this manual most useful. In the outlines for many activities to be attempted by a community launching a campaign for tuberculosis control, Miss Rood has done a thorough job. Although applied specifically to tuberculosis, the manual might well serve as a guide for public relations techniques in other fields of health education. The objectives of such a campaign, the steps to be taken in instituting a tuberculosis education program, institute suggestions for comittee use, and the use of graphs, charts, films, slides, and other media as discussed by Miss Rood, are essentially the same in, for example, syphilis, cancer, or pneumonia education. Those turning to "Tuberculosis Education" will find many practical aids, presented from the standpoint of a broad educational outlook. E. G. P. Copied from The Health Officer, U. S. P. H. S., December, 1937, page 373.

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Twenty-Five Years of Health Progress.—Louis I. Dublin, Ph.D., and Alfred J. Lotka, D.Sc., Metropolitan Life Insurance Co., New York, 1937, pp. 611.

This text is "a study of the mortality experience among the Industrial policyholders of the Metropolitan Life Insurance Company, 1911 to 1935."

This quarter century has been one of marvelous progress in public health. During this period the average duration of human life has been extended nearly fourteen years—about thirty per cent. Much of this improvement has been due to increased knowledge of sanitary science. Going along with this have been great and gratifying advances in medical science. The great endemics chargeable to infected food and water supplies have almost disappeared. The battle against tuberculosis has been phenominally successful. Artificially produced immunities have added greatly to the safety of childhood and of adults.

This book, after discussing briefly Health Progress, General Mortality, and Longevity, launches into chapter-length discussions of the changes in death rates for various diseases and groups of diseases. Not only is it a storehouse of valuable information, but it is fascinating reading not only for health officers, but for sociologists, and others deeply interested in their fellow man.

This is a text and—since it has been largely instrumental in bringing it about—a record of which the Company may well be proud.

CHARLES H. KEENE, M.D.